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EXAMINER

LE, DEBBIE M

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2177

DATE MAILED: 09/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/852,008

Applicant(s)

GIRKAR ET AL.

Examiner

DEBBIE M LE

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10, 13 and 15 are objected because a single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. This type of claim is indefinite because it fails to positively recite the boundaries sought for protection. The metes and bounds of the claim cannot be determined because it is unclear as to which category of subject matter sought or protection.

As per claim 3, "relationship is less than" is unclear what is meant.

Claim 14 recites the limitation "the counter" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rastogi (US Patent 6,205,449 B1) in view of Copper et al (US Patent 6,079,000).

As per claim 1, Rastogi et al discloses a system for allowing a secondary database operate as a hot spare for a primary database comprising:

maintaining a buffer of transactions to be sent to a standby database system (col. 2, lines 30-35); and

synchronizing a transaction performed on the primary database system based on a number of transactions in the buffer (col. 8, lines 3-8).

Rastogi does not explicitly teach a predetermined number of transactions. However, Cooper teaches at col. 12, lines 30-43). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of setting a predetermined number of transactions because it would allow a system efficient transferring data.

As per claim 2, Rastogi teaches wherein the step of synchronizing includes the step of blocking a commit of the transaction until the number of transactions in the buffers is in a predetermined numerical relationship with the predetermined number of transactions (col. 8, lines 15-23).

As per claim 3, Rastogi teaches wherein the predetermined numerical relationship is less than (col. 8).

As per claim 4, Rastogi teaches executing a log writer process to record the transaction in a redo log (col. 2, lines 30-32, col. 8, lines 24-36).

As per claim 5, Rastogi teaches wherein: the log writer process performs the step of synchronizing (col. 8, lines 37-44).

As per claim 6, Rastogi teaches wherein: a database application process performs the step of synchronizing before submitting the transaction to the log writer process (col. 8, lines 3-23).

As per claim 8, Cooper teaches the steps of receiving input from an operator indicating a transaction loss bound; and setting the predetermined number of transactions based on the transaction loss bound (col. 12, lines 30-42).

Claim 10 is rejected under the same rationale as state in claim 1.

Claims 7, 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rastogi (US Patent 6,205,449 B1) in view of Copper et al (US Patent 6,079,000), and further in view of Hapner.

As per claim 7, Rastogi teaches the step of executing a net server process to transmit the transaction over a network connection to the standby database system (col.

3, lines 19-22), receive an acknowledgment that a redo record for the transaction has been written to a standby log at the standby database system (col. 3, lines 54-57, col. 4, lines 3-23).

Rastogi and Cooper do not explicitly teach remove the transaction from the buffer in response to the acknowledgment. However, Hapner teaches a transaction counter to perform the step of incrementing and decrementing of (fig. 4, col. 3, lines 42-67, col. 4, lines 1-4, col. 14, lines 48-67, col. 15, lines 1-23). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references in order to allow the system to perform a transaction synchronization in an effective and efficient manner (Hapner, col. 3, line 15).

As per claim 9, Rastogi and Cooper do explicitly teach wherein the step of synchronizing includes the steps:

storing a counter indicating a number of the transactions in the buffer; when adding the transaction to the buffer, incrementing the counter; when removing the transaction from the buffer, decrementing the counter; blocking a commit of the transaction when the counter is not less than the predetermined number of transactions; and acknowledging the commit of the transaction when the counter is less than the predetermined number of transactions. However, Hapner teaches the functioning of a counter (fig. 4, col. 3, lines 42-67, col. 4, lines 1-4, col. 14, lines 48-67, col. 15, lines 1-23). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references in order to allow

the system to perform a transaction synchronization an efficiently manner (Hapner, col. 3, line 15).

As per claim 11, Rastogi teaches
maintaining a queue of transactions to be sent to a standby database system
(col. 2, lines 30-35);
executing a log writer process to: record the transaction in a redo log (col. 2, lines 30-32, col. 8, lines 24-36); and
executing a net server process to: transmit the transaction over a network
connection to the standby database system (col. 3, lines 19-22), receive an
acknowledgment that a redo record for the transaction has been written to a standby log
at the standby database system, and in response to the acknowledgment (col. 3, lines 54-57, col. 4, lines 3-23).

Rastogi does not explicitly teach storing a predetermined bound of transactions. However, Cooper teaches at col. 12, lines 30-43). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of setting a predetermined number of transactions because it would allow a system efficient transferring data.

Rastogi and Cooper do not explicitly teach storing a counter indicating a number of the transactions in the queue, compare the counter and the predetermined bound, if the counter is not less than the predetermined bound, then block a commit of the transaction until the counter is less than the predetermined bound, and if the counter is less than the predetermined bound, then increment the counter and acknowledge the

commit of the transaction; remove the transaction from the queue and decrement the counter. However, Hapner teaches the functioning of a counter (fig. 4, col. 3, lines 42-67, col. 4, lines 1-4, col. 14, lines 48-67, col. 15, lines 1-23). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references in order to allow the system to perform a transaction synchronization an efficiently manner (Hapner, col. 3, line 15).

As per claim 12, Rastogi teaches recording a transaction in a redo log (col. 2, lines 30-32, col. 8, lines 24-36);

Rastogi does not explicitly teach a predetermined bound of transactions. However, Cooper teaches at (col. 12, lines 30-43). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of setting a predetermined number of transactions because it would allow a system efficient transferring data.

Rastogi and Cooper do not explicitly teach comparing a counter indicating a number of the transactions in a queue of transactions to be sent to a standby database system; if the counter is not less than the predetermined bound, then blocking a commit of the transaction until the counter is less than the predetermined bound, and if the counter is less than the predetermined bound, then incrementing the counter and acknowledging the commit of the transaction. However, Hapner teaches the functioning of a counter (fig. 4, col. 3, lines 42-67, col. 4, lines 1-4, col. 14, lines 48-67, col. 15, lines 1-23). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references in order to allow

the system to perform a transaction synchronization an efficiently manner (Hapner, col. 3, line 15).

Claim 13 is rejected under the same rationale as state in claim 12.

Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rastogi (US Patent 6,205449 B1) in view of Hapner et al (US Patent 5,940,827).

As per claim 14, Rastogi teaches

accessing a transaction maintained in a buffer of transactions to be sent to a standby database system (col. 2, lines 30-35); transmitting the transaction over a network connection to the standby database system (col. 3, lines 19-22);

receiving an acknowledgment that a redo record for the transaction has been written to a standby log at the standby database system (col. 3, lines 54-57, col. 4, lines 3-23)

Rastogi does not explicitly teach in response to the acknowledgment, removing the transaction from the queue and decrementing the counter. However, Hapner teaches a transaction counter to perform the step of incrementing and decrementing of (fig. 4, col. 3, lines 42-67, col. 4, lines 1-4, col. 14, lines 48-67, col. 15, lines 1-23).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references in order to allow the system to perform a transaction synchronization an efficiently manner (Hapner, col. 3, line 15).

Claim 15 is rejected under the same rationale as state in claim 14.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rastogi et al (US Patent 6,205,449 B1) in view of Copper et al (US Patent 6,079,000) and further in view of Nilsen et al (US Patent 5,668,986).

As per claim 16, Rastogi teaches performing the steps of maintaining a buffer of transactions to be sent to a standby database system (col. 2, lines 30-35); and synchronizing a transaction performed on the primary database system based on a number of transactions in the buffer (col. 8, lines 3-8) and the corresponding bound. Rastogi further teaches the system is run in parallel (col. 3, lines 10-14).

Rastogi does not explicitly teach setting a bound for each of the multiple database servers. However, Cooper teaches at (col. 12, lines 30-43). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the step of setting a predetermined number of transactions because it would allow a system efficient transferring data.

Rastogi and Cooper do not teach having multiple database servers operating in parallel and accessing a common database on a shared disk. However, Nilsen et al teaches multiple database servers (fig. 2). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the cited references to implement the system having multiple database servers in order to speed up processing of transactions.

Conclusion

Art Unit: 2177

If a reference indicated as being mailed on PTO-FORM 892 has not been enclosed in this action, please contact Lisa Craney whose phone number is (703) 305-9601 for faster service.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE M LE whose telephone number is 703-308-6409. The examiner can normally be reached on 8:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



DEBBIE M LE
Examiner
Art Unit 2177

Debbie Le
Sept.-03, 2003



GRETA ROBINSON
PRIMARY EXAMINER